

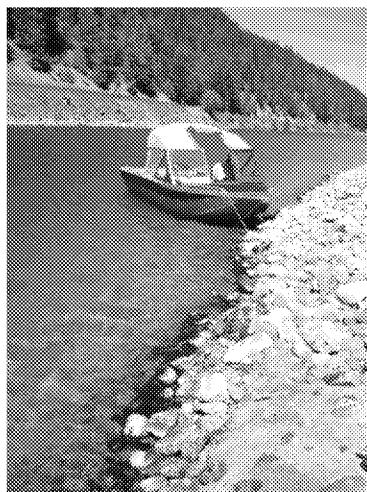
Ktunaxa Brief: Selenium

Kootenai Tribe of Idaho

5/31/2018

Edition 1, Volume 1

The Kootenai Tribe of Idaho has been collecting both tissue (egg) and water samples and analyzing them for selenium and other heavy metals. This effort is planned to continue into the future.



Selenium has been detected in the Kootenai River above the Kootenai Falls (2007), near the Yaak River confluence (2004), Crossport (2002), and Shorty's Island (2003). The detection limit of Se has changed from 1.5 µg/L to 1.0 µg/L even though KTQI uses the same lab, IEH Analytical, Seattle, WA.

Water samples are collected periodically at specific sites and analyzed for total and dissolved selenium at IEH Analytical in Seattle, WA. Detecting selenium at these sites has been rare until this season where two detections were made just below Libby Dam, MT.

Sample ID	Location	Sample Date	TOT. SELENIUM (mg/L)	DISS. SELENIUM (mg/L)
KR14-SE	Wardner, BC	4/9/2018	<0.0010	<0.0010
KR13-SE	below Libby Dam	4/10/2018	0.0011	0.0011
KR10.5-SE	Troy, MT	4/10/2018	<0.0010	<0.0010
KR13-SE	below Libby Dam	5/1/2018	0.0012	0.0012
KR10.5-SE	Troy, MT	5/1/2018	<0.0010	<0.0010

Contaminant Analysis

KR White Sturgeon egg analysis results

Heavy metals were analyzed in 19 samples (2015-2017) and compared to results from other studies (1997-2007). Preliminary results indicate selenium concentrations in egg tissues have remained stable. Results are in µg/L.

Year	Arsenic	Barium	Cobalt	Copper	Manganese	Mercury	Selenium	Strontium	Thallium	Zinc
1997-2000 n=20 (0.07-1.2) 0.29	ND	ND	n=36 (0.58-6.9) 2.25	ND	ND	n=39 (0.24-12) 1.55	ND	ND	n=39 (17-170) 34.32	
2001 n=3	<10	<0.5	<0.5	(1.7-2.1) 1.83	(0.6-0.8) 0.73	(0.02-0.03) 0.03	<10	<0.3	<10	(22.5-25.1) 23.9
2002 n=3 (0.07-0.14) 0.1	(0.19-0.21) 0.2	<0.02	(1.57-2.17) 1.83	(0.45-0.59) 0.54	Not Tested	(0.9-1.1) 1.0	(0.08-0.15) 0.11	≤0.01	(17.6-19.2) 18.23	
2003	No Eggs Tested	---	---	---	---	---	---	---	---	---
2004 n=5 (0.04-0.21) 0.15	(0.10-0.30) 0.2	≤0.02	(1.47-2.32) 1.86	(0.36-0.72) 0.56	Not Tested	(0.96-1.27) 1.12	(0.09-0.17) 0.12	≤0.022	(14-21.9) 18.18	
2005 n=6 (0.06-0.23) 0.12	(0.13-0.26) 0.17	<0.02	(0.89-2.17) 1.70	(0.25-0.75) 0.54	Not Tested	(0.54-1.57) 1.13	(0.71-0.14) 0.11	<0.01	(7.94-23.6) 17.86	
2006 n=7 (0.06-0.26) 0.12	(0.32-0.75) 0.42	≤0.02	(1.29-2.62) 1.84	(0.41-0.89) 0.62	(0.01-0.07) 0.03	(0.95-3.01) 1.49	(0.1-0.3) 0.2	Not Tested	(15.6-28.4) 19.1	
2007 n=5 (0.04-0.22) 0.10	(0.10-0.37) 0.23	≤0.04	(0.89-2.09) 1.53	(0.40-1.09) 5.68	(0.01-0.03) 0.02	(0.57-1.62) 0.96	(0.15-0.23) 0.17	≤0.01	(8.11-26.4) 15.00	
2015 n=10 (0.08-0.48) 0.13	(0.09-0.55) 0.19	(0.003-0.014) 0.01	(1.45-2.08) 1.75	(0.31-0.61) 0.46	(0.01-0.15) 0.06	(1.0-1.8) 1.34	(0.08-0.13) 0.11	(0.003-0.01) 0.01	(18.13-21.87) 19.74	
2016 n=2 (0.06-0.07) 0.06	(0.10-0.11) 0.11	(0.003-0.01) 0.01	(1.31-1.92) 1.62	(0.34-0.51) 0.43	(0.03-0.09) 0.06	(0.83-0.86) 0.85	(0.11-0.14) 0.13	0.003 0.003	(15.42-19.81) 17.61	
2017 n=7 0.08	(0.07-0.04) 0.17	(0.11-0.22) 0.01	(0.003-0.01) 1.85	(1.41-2.19) 0.50	(0.29-0.72) 0.06	(0.02-0.06) 0.06	(0.93-1.68) 1.24	(0.07-0.14) 0.11	(0.003-0.01) 0.01	(17.61-21.55) 19.44

Kootenai River white sturgeon eggs will be collected again in June 2018 for continued contaminants analysis.

Kootenai Tribe of Idaho

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